

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

### Amendments

Please amend the Claims as follows:

- 1    **1. (Currently Amended)** A method for allowing a request that is any of multiple types  
2    to gain access to ~~any of multiple resources~~ a resource, comprising:
- 3            a.) defining ~~one or more~~ multiple thresholds, each representing a respective  
4    predetermined number of requests ~~the resources~~;
- 5            b.) associating each threshold with one or more of the types, and wherein at  
6    least one of the types is associated with multiple thresholds;
- 7            c.) receiving a request; and
- 8            d.) if any of the thresholds associated with the type of the received request has  
9    not yet been exceeded such that for the threshold, the respective predetermined number  
10   of requests of the one or more associated types have not yet gained access to the  
11   resource, granting the request access to the resource.
- 12           ~~d.) determining, for each threshold associated with the type of the request,~~  
13   ~~whether fewer than the predetermined number of resources represented by the~~  
14   ~~threshold are each handling a request of any associated type, and if so, allowing the~~  
15   ~~request to gain access to any one of the resources that is not handling a request.~~
- 1    **2. (Currently Amended)** The method of Claim 1, and further including determining that  
2    the request must be retried if ~~each of the predetermined number of resources~~  
3    ~~represented by each threshold that is associated with the type of the request is already~~  
4    ~~handling a request~~ has been exceeded.

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

1 3. **(Original)** The method of Claim 2, and further including tracking a requester that  
2 issued the request after a determination is made that the request must be retried.

1 4. **(Currently Amended)** The method of Claim 3, and further including:  
2 receiving a request from a tracked requester; and  
3 allowing the request from the tracked requester to gain access to ~~any one of the~~  
4 ~~resources~~ the resource even if each of the thresholds associated with the type of the  
5 request received from the tracked requester has been reached.

1 5. **(Currently Amended)** The method of Claim 4, and further including discontinuing  
2 tracking of a tracked requester after a request from the tracked requester is allowed to  
3 gain access to the resource ~~any available one of the resources~~.

1 6. **(Currently Amended)** The method of Claim 4, and further including:  
2 creating a partition that includes one or more requesters issuing requests to the  
3 ~~multiple resources~~ the resource; and  
4 allowing the request from the tracked requester to gain access to ~~any one of the~~  
5 ~~multiple resources~~ the resource only if the tracked requester is one of the one or more  
6 requesters included in the partition.

1 7. **(Original)** The method of Claim 6, wherein the one or more predetermined types  
2 include read requests.

1 8. **(Currently Amended)** The method of Claim 4 wherein multiple requesters are being  
2 tracked, and further including utilizing a predetermined priority scheme to select a

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

3 request from one of the multiple tracked requesters to gain access to the resource any  
4 ~~one of the multiple resources that is not handling a request.~~

1 9. **(Original)** The method of Claim 2, wherein a determination that the request must be  
2 retried is only made if the request is any of one or more predetermined types.

1 10. **(Currently Amended)** The method of Claim 2, and further including allowing the  
2 request to gain access to ~~any available one of the multiple resources~~ the resource for  
3 purposes of causing the request to be retried.

1 11. **(Original)** The method of Claim 1, wherein step a.) is performed programmably.

1 12. **(Original)** The method of Claim 1, where step b.) is performed programmably.

1 13. **(Original)** The method of Claim 1, wherein at least one of the thresholds is  
2 associated with a subset of the request types that are associated with a different one of  
3 the thresholds.

1 14. **(Currently Amended)** A method of processing requests issued to a shared  
2 resource by multiple requesters within a data processing system, wherein each request  
3 is any one of multiple types, the method comprising:  
4 a.) defining one or more thresholds, each threshold being associated with one or  
5 more of the types and at least one of the types being associated with multiple

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

6 thresholds, each threshold indicating the maximum number of requests of any of the  
7 associated types that may be pending simultaneously to the shared resource;  
8 b.) receiving a request; and  
9 c.) determining, for each threshold associated with the type of the request,  
10 whether the maximum number of requests indicated by the threshold has been reached,  
11 and if not, initiating processing on the request.

1 15. **(Original)** The method of Claim 14, wherein step a.) includes programmably  
2 selecting the one or more thresholds.

1 16. **(Original)** The method of Claim 15, wherein step a.) includes programmably  
2 associating each of the thresholds with the one or more types.

1 17. **(Original)** The method of Claim 14, and further including providing an indication to  
2 retry the request if the maximum number indicated by each threshold associated with the  
3 type of the request has been reached.

1 18. **(Original)** The method of Claim 17, and further including performing the providing  
2 step only for predetermined types.

1 19. **(Original)** The method of Claim 17, and further including:  
2 selecting a requester that has been provided an indication to retry a request;  
3 receiving an additional request from the selected requester; and

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

4 initiating processing of the additional request even if, for each threshold  
5 associated with the type of the additional request, the maximum number indicated by the  
6 threshold has been reached.

1 20. **(Original)** The method of Claim 19, wherein the selecting step is performed using a  
2 rotational priority scheme applied to all requesters that have received an indication to  
3 retry a request and which have not subsequently issued a request for which processing  
4 was completed.

1 21. **(Original)** The method of Claim 14, wherein the request types are selected from the  
2 group consisting of read requests, write requests, retry requests, and high-priority read  
3 requests.

1 22. **(Original)** The method of Claim 14, and further including:  
2 associating a first threshold with all request types;  
3 associating a second threshold with a first sub-set of all request type;  
4 associating a third threshold with a sub-set of the first sub-set; and  
5 wherein the first threshold is indicative of a number that is less than the number  
6 indicated by the second threshold, which is less than the number indicated by the third  
7 threshold.

1 23. **(Original)** The method of Claim 14, and further including providing an indication to  
2 requesters to stop issuing requests if all of the one or more thresholds have been  
3 reached.

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

1   **24. (Currently Amended)**   A system for controlling the manner in which requests are  
2   provided to a shared resource, comprising:  
3         one or more storage devices, each to store a respective threshold value that is  
4   associated with one or more types of requests and wherein at least one of the types of  
5   requests is associated with multiple threshold values, each threshold value indicating a  
6   cumulative number of requests of the associated types that may gain access to the  
7   shared resource at any given time before the threshold value is reached;  
8         load control logic coupled to each of the storage devices to receive requests, and  
9   to allow each request to gain access to the shared resource if the type of the request is  
10   associated with a threshold value that has not yet been reached; and  
11         live-lock logic coupled to the load control logic to selectively elevate the status of  
12   a request that is of a type associated with one or more thresholds values that have been  
13   reached, thereby allowing the request to gain expedited access to the shared resource.

1   **25. (Original)** The system of Claim 24, wherein the load control logic includes  
2   retry logic to provide an indication that a request must be retried at a later time if  
3   all threshold values associated with the type of the request have been reached.

1   **26. (Original)** The system of Claim 25, wherein the live-lock logic includes:  
2         a retry storage device to track each requester that issued a request for which a  
3   retry indication was provided; and  
4         priority logic coupled to the storage device to select a requester that is being  
5   tracked; and

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

6 logic coupled to the retry storage device to provide elevated status for a request  
7 issued by a selected requester, whereby the request is allowed to gain access to the  
8 shared resource even if all threshold values that are associated with the type of the  
9 request have been reached.

1 27. **(Original)** The system of Claim 26, wherein one of the one or more storage devices  
2 stores a threshold value associated with requests having an elevated status.

1 28. **(Original)** The system of Claim 26, wherein the priority logic includes circuits to  
2 implement a rotational priority scheme.

1 29. **(Original)** The system of Claim 24, and further including one or more second  
2 storage devices coupled to the load control logic, each respectively associated with one  
3 of the one or more storage devices, each to store an indication of the one or more  
4 request types that are associated with the threshold value stored by the respectively  
5 associated one of the one or more storage devices.

1 30. **(Original)** The system of Claim 29, and further including a programming  
2 interface coupled to the one or more storage devices and the second one or  
3 more storage devices to programmably select the stored threshold values and  
4 the stored indications of the one or more request types.

1 31. **(Currently Amended)** A system for controlling the manner in which requests of  
2 any of one or more request types access multiple resources, comprising:

Serial No 10/675,784  
Filed 9/30/2003  
Examiner Christopher Shin

Office Action Response  
January 9, 2006  
Group Art Unit 2182

3 threshold means for storing one or more threshold values, each threshold value  
4 for being associated with one or more of the request types and at least one of the  
5 request types being associated with multiple threshold values, each threshold value for  
6 specifying a cumulative maximum number of requests of associated request types that  
7 may gain access simultaneously to any of the resources; and  
8 load control means for receiving a request and for determining whether the  
9 request is of a type associated with one or more threshold values for which the specified  
10 cumulative maximum number of requests has not yet gained simultaneous access to the  
11 multiple resources, and if so, for allowing the request to gain access to any available one  
12 of the multiple resources.

1 32. (Original) The system of Claim 31, and further including live-lock means for elevating  
2 the status of the request to allow the request to gain access to any available one of the  
3 multiple resources regardless of whether the request is of a type associated only with  
4 threshold values for which the specified cumulative maximum number of requests has  
5 gained simultaneous access to the multiple resources.